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THE REA LINEMAN

RURAL ELECTRIFICATION ADMINISTRATION

U. S. DEPARTMENT OF AGRICULTURE

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SAFETY PLANS FORMULATED AT WORKSHOP CONFERENCE

REA Safety and Job Training problems for the coming year were discussed by 20 Safety Instructors from 18 states attending the Workshop Conference at REA headquarters in St. Louis October 17, 18, and 19.

An Illinois Foremen's and Managers' Meeting, held two days before the Conference, was also well attended. This gathering was arranged by Dean Searls, secretary-treasurer of Illinois Safety and Job Training Committee, and D. B. Bidle, Illinois Safety and Job Training Supervisor.

Additional information about both meetings will be published in the November issue of "The Lineman."

NATIONAL SAFETY COUNCIL OFFERS SPECIAL MEMBERSHIP

The special membership offer to REA cooperatives by the National Safety Council is one of the least expensive and best services offered. The Council furnishes considerable literature and offers valuable safety engineering services. Its findings are based on nation-wide experience, and solutions to problems are worked out by some of the best technical minds in the industry. Engineering, chemical and medical questions are answered without charge, even though new problems usually involve considerable expense to the Council. Each membership includes the following literature:

1. National Safety News, monthly.
2. Public Utilities Section News Letter, monthly.
3. Six Safety Posters, annually.
4. Safe practices pamphlet PU-3.
5. Accident Facts, annually.
6. Safety Instruction Cards.
7. Safe at Home Pamphlet.
8. Home Safety News Letter, monthly.
9. Public Safety Magazine, monthly.
10. Consultation with the Council's safety engineering staff, Bureau of Information, or safety library facilities.

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FAULTY GROUND WIRE KILLS LINEMAN'S HELPER

BROKEN WIRE AND DAMAGED EQUIPMENT CAUSE FATAL ACCIDENT

SEE ILLUSTRATION, PAGE 3

THE ACCIDENT

A lineman and his helper were sent out to locate and repair damage resulting from a severe electrical storm. Trouble was located and cleared involving a section of secondary line.

The two men went to the substation (2400-volt Delta connected) to check transformer fusing. The helper leaned against a pole and came in contact with the ground wire. He received an electrical shock which killed him instantly.

Investigation disclosed that lightning had severed the ground wire at the ground line, thereby destroying the protective quality of the ground wire. The wire was in contact with the phase because of damaged pole equipment.

DISCUSSION

Delta systems differ from the multi-grounded wye system in general use by REA. A ground wire, under certain conditions, may be dangerous in both systems if it is broken and not making contact with the ground.

DELTA SYSTEMS - No primary phase of a delta system is grounded. This holds true for the generating station coil windings, substations, and the primary conductors. Theoretically, there is no working

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Published Monthly in the Interest of Safety
for Employees of REA Systems

David A. Fleming, Editor

DETAILS

"It's the little things in life that count," is a maxim familiar to all of us. That saying is all too true in Accident Prevention work.

What are the causes of most of our accidents? Are they explosions, falling of distribution lines, or are they just minor things such as failure to wear leather gloves, use of the skinning knife, not planning the job, tools without guards, handling tools improperly? Why do we pay so little attention to the little things—the details?

Last year, during one of the most severe sleet storms in years, the employees of Kentucky cooperatives repaired and maintained their lines without a lost-time accident. Everyone was on his toes, details were watched closely, and the results were gratifying to all. Good leaders retain their leadership by watching details.

DETAILS -- WATCH DETAILS

--Submitted by Kentucky Safety Committee--

THE LINEMAN'S MAILBOX

To the Editor:

I receive the Lineman each month and appreciate it very much. It's interesting to read and I like to keep up with the changing of things as much as possible. Thanks.

Guthrie Howard
Mindanao, Philippine Islands

To the Editor:

The Georgia co-ops recently completed a foremanship training conference that we feel was a total success.

Through the Department of Education's cooperation we were fortunate in having John Owen from Georgia Tech to put over the training.

Most of the Georgia systems participated in the conference. Talks were given by Jack Shehee, REA Field Safety Engineer and by yours truly.

V. H. Barfield,
Georgia REA Safety Instructor

IT'S TOO LATE NOW!



--Kentucky Safety Bulletin

STAY ALIVE IN '45!

To the Editor:

The most important part of our work is SAFETY. Our job is no safer than our tools and the men using them.

According to The Lineman, most of our accidents are caused by failure to use rubber gloves.

The co-ops, municipalities and utilities furnish rubber gloves and other rubber goods to make the job safe; they furnish the time, and pay us to use them. Why not use them? Thousands of dollars are spent to make our job safe. REA system employees should spend a little time to help make the Safety Program work.

J. L. Bledsoe, Manager
MARSHALL DEKALB ELECTRIC COOPERATIVE
(Alabama 43) Boaz, Alabama

GROUND WIRES CAN BE DANGEROUS!

(Discussion continued from page 1)

voltage between phase and ground, providing that all insulators are intact and all phases are prevented from forming a ground. In the event one phase has been grounded through a fault, then there is full line voltage between either of the other two phases and ground.

OTHER CONSIDERATIONS - While this is true from a standpoint of line voltage (see sketch 1) other considerations must be taken into account. Long lines, insulated and parallel to the earth, produce a condenser effect. Energy thus stored is not sufficient to do useful work, but is probably of sufficient magnitude to cause death. (The smallest current intensity known to have caused death is 25 milliamperes*).

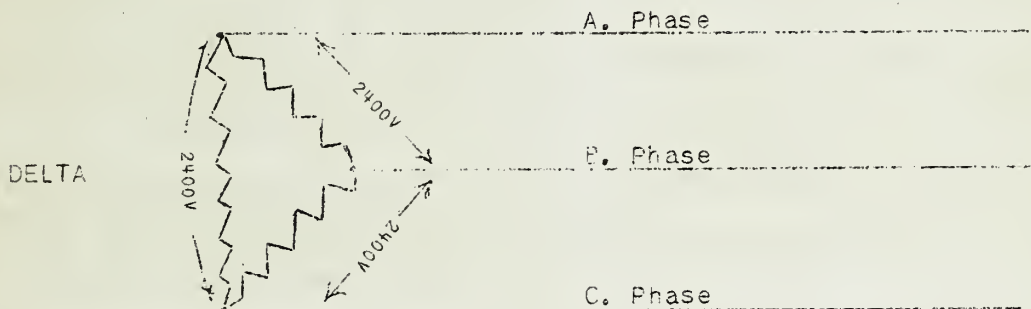
Also, long lines tend to pick up electrostatic charges - especially during electrical storms. These charges are seeking a path to ground and are no respecter of humans when we form a link in their path to ground.

MULTI-GROUNDED WYE SYSTEMS - One primary conductor

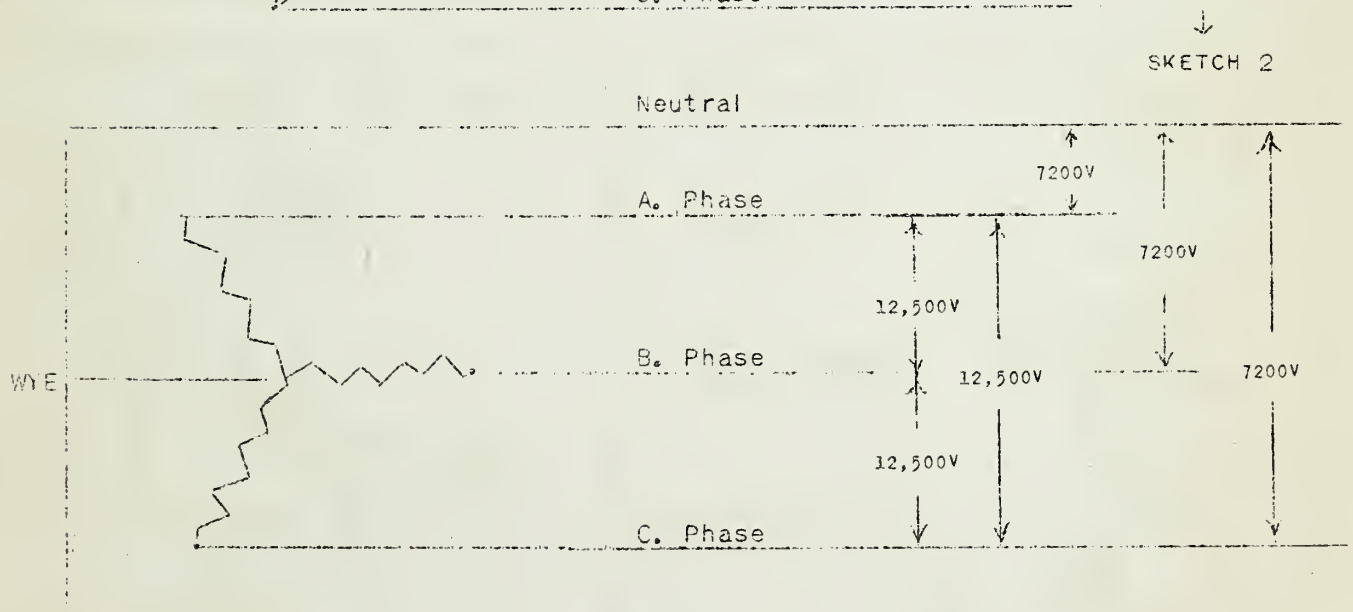
of a grounded wye system is grounded. This holds true for all generator coil winding, substations, transformers, and one of the primary conductors of the line. Phase to phase voltage is ordinarily 12,500 volts. Phase to neutral conductor or the ground is 7,200 volts (see sketch 2.) The neutral of the primary system and the neutral of the secondary system are common in that they are tied together at all line transformers.

ANOTHER POSSIBLE DANGEROUS SITUATION - Under certain conditions, a very dangerous situation can exist if connection is not made between the primary neutral conductor and the transformer secondary neutral terminal, or if damage causes this connection to break. In this situation the only ground protection is the transformer ground wire on the pole connected to the transformer case and also to the secondary transformer ground terminal. This transformer ground wire will cause the primary winding to be energized at somewhat less than full voltage. If this transformer ground wire breaks, then no ground connection exists on the neutral side of the transformer pri-

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SKETCH 1



SKETCH 2

WHAT ARE YOUR ANSWERS?

O. L. Heath, Virginia Safety and Job Training Instructor, asks the Virginia cooperative employees the following questions:

Do you feel that safety is your personal responsibility?

Would you spend a few minutes preparing to do a job the safe way or take a chance on doing it the unsafe way?

Do you realize that your cooperative manager does not require or want you to take a chance on getting injured merely to save a few minutes time?

Do you think safety is something for the other fellow?

Do you feel that your cooperative is furnishing the necessary protective equipment and tools to make your job safe as possible?

What additional equipment, if any, do you think is needed on your cooperative?

Do you think protective grounds should be put on all de-energized lines before touching them?

Do you think a lineman should wear rubber gloves as a part of his climbing equipment?

Do you take proper care of your personal tools?

What working practices or habits are followed on your cooperative that you think should be changed to make the job safer?

Is there any phase of your work that you don't clearly understand?

What particular jobs on REA work do you think are most hazardous?

What are your recommendations for the safest way to do those jobs?

What changes in the Job Training and Safety Program do you think should be made?

THREE SAFETY TIPS

1. To Ground A Line Safely, always attach ground connection first. Connect to phase wire last.
2. To Remove Ground Safely, always remove phase clamp first. Remove neutral clamp last.
3. Use an 8-foot hot stick and rubber gloves to perform this operation.

SPECIAL MEMBERSHIP

(Continued from page 1)

The National Safety Council has made this country safety-conscious. They deserve support from every REA system for their work in schools, homes, on the highway, and on the job.

GROUND WIRE

(Continued from page 3)

mary winding. To touch this wire would place the lineman in series with the transformer primary winding between phase and ground.

This case may seem far-fetched and beyond the realm of "likely to happen on our project." The fact that this did happen on an REA system makes us feel that all REA linemen should be familiar with the unusual as well as the everyday hazards of their work. No accident resulted from this case because the linemen correcting the trouble recognized the danger and proceeded accordingly.

**One milliamper is one one-thousandth of an ampere. The National Safety Council expresses this relationship between one milliamper and one ampere as the relationship of one penny to a \$10 bill.*

